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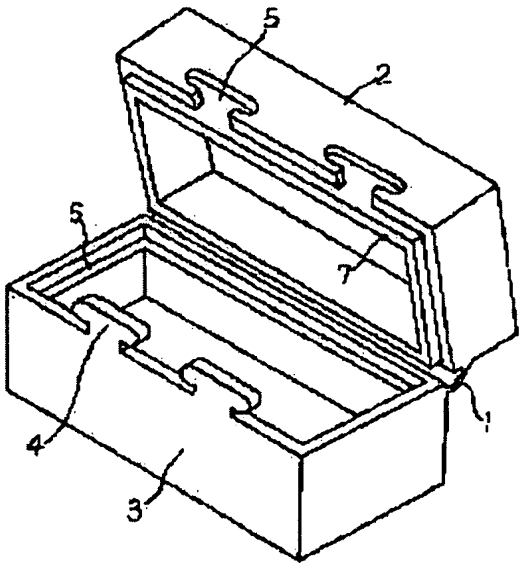
(54) FIT-IN TYPE CONTAINER MADE OF EXPANDED SYNTHETIC RESIN

(57)Abstract:

PURPOSE: To provide a box with lid made of a synthetic resin expanded body, which has a hinge part which can be integrally formed, and can prevent the lid body from being opened unexpectedly.

CONSTITUTION: The title container is made of a bead cellular molding of a polyolefin resin, and protruding parts 4 and recessed parts 5, which are fitted when a lid body 2 is closed, are provided. The shape of the protruding part 4 is formed in such a manner that the leading end side is wider than the base side, and the shape of the recessed part 5 is formed to fit the shape of the protruding part 4. By the bead cellular molding body of a polyolefin resin, a thin hinge part 1 with sufficient strength can be integrally formed, and in addition, by the fitting between the protruding part 4 and recessed part 5 with elastic deformation, a lid body 2 can be prevented from being opened unexpectedly.



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CLAIMS

[Claim(s)]
[Claim 1] It is the synthetic-resin foam fitting container which it consists of the lid and body which were connected with one by the hinge region of thin meat, and the heights and the crevice which are mutually inserted in a lid and a body at the time of lid closing are formed, and heights have a broad part from a base side in a tip side, and is characterized by nothing and the whole being fabricated by bead foaming of polyolefine system synthetic resin in the configuration [crevice] according to the configuration of these heights at one.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application] This invention relates to a container with a lid especially about the container made from synthetic-resin foam used for a package of goods weak against an impact, and the goods which require incubation.
[0002]
[Description of the Prior Art] Conventionally, as a container made from synthetic-resin foam, since the container of various configurations can really be fabricated easily, the bead foaming article of the synthetic resin of a polyolefine system or a polystyrene system is used widely. Moreover, although many containers with a lid are also used, this is that from which the lid and the body turned into another object.
[0003]
[Problem(s) to be Solved by the Invention] However, some from which the lid and the body turned into another object have a problem also with an inconvenient about [that a lid and a body come apart and it is hard to deal with it], manufacture, and quality control top, when packing by preparing a lot of containers. Although there is also a thing which enabled it to open and close a lid by using this adhesive tape as a hinge region while connecting the 1 side of a lid and a body with adhesive tape before use, there is a problem which requires the time and effort for attaching adhesive tape one by one.
[0004] Moreover, although a lid and a body have many which can fit in now, this fitting is insufficient, it is easy to open a lid carelessly, or there is also a problem which is easy to produce a crack and a chip. Since a lid is opened and closed by the circular motion focusing on this hinge region when the above hinge regions are prepared especially, there is a problem which it is hard to obtain fitting which carried out the lid and the body just as compared with the case where it enables it to open and close perpendicularly, without preparing a hinge region, and becomes easy to produce a crack and a chip.
[0005] This invention was made in view of such a conventional trouble, and it aims at enabling it to prevent a crack and a chip in the unprepared open list of a lid while it connects a lid and a body by the really fabricated hinge region about the fitting container of synthetic-resin foam.
[0006]
[Means for Solving the Problem] If drawing 1 equivalent to one example of this invention explains the means provided by this invention, it will consist of the lid 2 and body 3 which were connected with one by the hinge region 1 of thin meat. For this reason, on a lid 2 and a body 3 The heights 4 and the crevice 5 which are mutually inserted in at the time of lid 2 closing are formed. Heights 4 have a broad part from a base side in a tip side, and are using the crevice 5 as the synthetic-resin foam fitting container with which nothing and the whole are fabricated by bead foaming of polyolefine system synthetic resin in the configuration according to the configuration of these heights 4 at one.
[0007]
[Function] The hinge region 1 fabricated by one in this invention is not based on adhesive tape, but the fitting container with which the lid 2 and the body 3 were connected with one is brought about. It has the big description at the point which found out that fitting accompanied by the point which is

using the polyolefine system synthetic resin which can produce neither a crack nor a chip easily, and found out that the thin hinge region 1 could be formed, and the elastic deformation of heights 4 and a crevice 5 from which the fitting condition by which it is accompanied, and from which it is hard to separate is acquired especially of this invention became possible.
[0008] By the way, fabricating a part like the hinge region 1 in this invention by bead foaming to one is not carried out noting that conventionally sufficient reinforcement's is not obtained. Especially, with the bead foaming object of polystyrene system synthetic resin, since brittleness is large, unless special post processing is also performed, reinforcement required as a hinge region 1 cannot be obtained.
[0009] However, as for this invention person etc., in the case of the bead foaming object of polyolefine system synthetic resin, one shaping of the hinge region 1 in this invention will not be brought [that a bead splits also in a thin shaping part by which welding is carried out one grain at a time together with one train, cannot produce ****** easily, and can maintain practical reinforcement enough, and] about without a header and this.
[0010] The heights 4 and the crevice 5 in this invention are that the crevice 5 of the configuration where the configurations of the heights 4 in which the point spread so to speak, and these heights 4 were met is inserted in, and a lid 2 is stopped by the body 3 at the time of closing of a lid 2, and they leak the stability of a closing condition. Moreover, these heights 4 and a crevice 5 insert in, and it is performed by carrying out elastic deformation of the broad part of heights 4, and doubling is possible [it inserts in, and] just because it is the bead foaming object of such polyolefine system synthetic resin that doubling is flexible, is tenacious and is rich in elastic-deformation ability.
[0011] It is the thing which are accompanied by such elastic deformation and for which it inserts in and doubling is not performed with a bead foaming object, either. Since brittleness is large with the bead foaming object of polystyrene system synthetic resin, it inserts in and doubling is especially impossible such only by becoming the cause of a crack.
[0012] Moreover, in this invention, if it is the bead foaming object of polyolefine system synthetic resin, having also really obtained heights 4 and a crevice 5 with shaping is based on the knowledge of this invention person that mold omission can be easily performed by carrying out elastic deformation of the part concerned, without spoiling mold goods etc., even if it has the inverse tapered shape-like part to the direction of mold omission which originally cannot perform mold omission easily.
[0013]
[Example] As shown in drawing 1 , the lid 2 and the body 3 are connected with both back side side by the thin hinge region 1 prepared in one, and closing motion of a lid 2 is attained by making this hinge region 1 crooked. [0014] To body 3 upper edge part of the opposite side, heights 4 have projected in the hinge region 1. these heights 4 have a tip side broader than a base side -- so to speak, fungoid is made. Moreover, these heights 4 and the crevice 5 of the configuration where the corresponding location was met at the configuration of heights 4 are formed in the lid 5, and both have come to insert in it by carrying out elastic deformation of the tip side broad section of heights 4 at the time of closing of a lid 5.
[0015] The surface inner circumference of a body 3 serves as the step 6 in the condition of having cut and lacked. Moreover, the frame part 7 which fits each other into this step 6 is formed in the lower side inner circumference of a lid 2. Although a step 6 and a frame part 7 are not indispensable, preparing is desirable, in order to prevent that a lid 2 shifts horizontally to a body 3 and to stabilize the closing condition of a lid 2 more.
[0016] As for this fitting container, the whole is really fabricated by bead foaming of polyolefine system synthetic resin.
[0017] as polyolefine system synthetic resin -- low, inside, high density polyethylene, and a line -- low density polyethylene and a line -- the propylene resin represented by the ethylene resin represented by super-low density polyethylene, the ethylene-vinylacetate copolymer, etc., polypropylene, an ethylene propylene random copolymer, the ethylene propylene block copolymer, etc., these mixed resin, etc. can be mentioned. the inside of these -- low, medium density polyethylene, and a line -- low density polyethylene and a line -- super-low density polyethylene and these mixed resin are desirable at the point of excelling in foaming and a moldability.

[0018] These resin can also be used without constructing a bridge and using also constructing a bridge. What is necessary is just to choose suitably the existence of the bridge formation, and selection of a degree of cross linking with target resin and target design value of a Plastic solid. For example, generally, although a ****** Plastic solid is enough acquired by practical use in the state of no constructing a bridge, as for propylene resin, it is desirable that the direction which constructed the bridge in the ethylene resin represented by polyethylene constructs a bridge since the homogeneity of foaming structure and the mechanical property of a Plastic solid increase. This degree of cross linking is the gel molar fraction for which it asks by the 8-hour extract residue of an ebullition xylene, and 5 - 80% of its range is desirable.
[0019] As for the bead foaming object of the polyolefine system synthetic resin which forms this fitting container, it is desirable that the expansion ratio is about 10 to 35 times. Moreover, as for a hinge region 1, it is desirable that it is the thin thing by which 1-2-piece welding of the bead with a diameter of about 2-5mm is carried out in the thickness direction of the cross section. Also when expansion ratio is too high, and also when too low, it is hard coming to obtain the reinforcement of the required hinge region 1. Moreover, if the number of the beads of the cross-section thickness direction of a hinge region 1 increases too much, or the diameter of a bead becomes large too much and the thickness of a hinge region 1 becomes thick too much, it will be hard to carry out closing motion of a lid 2, and will become easy to produce breakage of a hinge region 1.
[0020] Although the heights 4 and the crevice 5 which are illustrated are making the configuration forms a foul trick-par in the usual direction of mold omission, and mold omission becomes impossible when really fabricating this fitting container, in the case of the bead foaming object of polyolefine system synthetic resin, they can perform mold omission easily by carrying out elastic deformation of the part concerned.
[0021] Not only as a configuration which is illustrated but heights 4, the configuration, for example, a reverse wedge shape etc., where the width of face by the side of a tip is wider than that base side is sufficient as heights 4 and a crevice 5, and they should just define the configuration of a crevice 5 in accordance with the configuration of these heights 4. Moreover, that by which heights 4 and a crevice 5 are illustrated forms heights 4 in a lid 2 side conversely, and you may make it establish a crevice 5 in a body 3 side.
[0022]
[Effect of the Invention] While this invention is a thing as explained above, having the lid 2 which is connected with one by the hinge region 1, and is opened and closed and preventing disconnection of the unprepared lid 2 moreover in heights 4 and a crevice 5, it is hard to produce a crack and a chip and the fitting container which can be used repeatedly and which is easy to treat is obtained.

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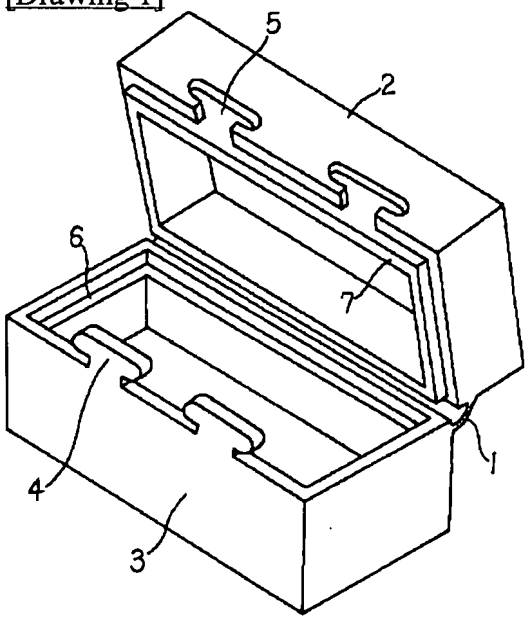
DRAWINGS

[Drawing 1]



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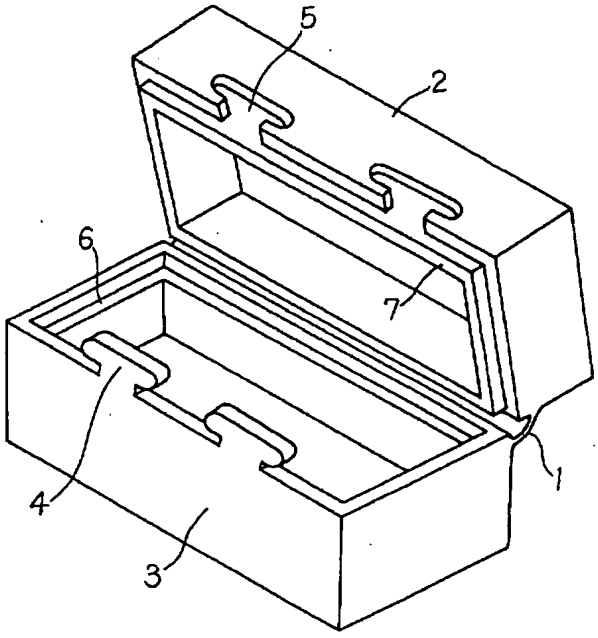
(54)【発明の名称】　合成樹脂発泡体嵌合容器

(57)【要約】

【目的】　一体成形できるヒンジ部１を有し、しかも不用意な蓋体２の開放を生じない合成樹脂発泡体製蓋付箱とする。

【構成】　ポリオレフィン系樹脂のビーズ発泡成形体製とし、蓋体２の閉鎖時に嵌め合わされる凸部４と凹部５を設け、凸部４の形状を基部側より先端側を幅広とし、凹部５の形状をこの凸部４の形状に沿った形状とする。

【効果】　ポリオレフィン系樹脂のビーズ発泡成形体であれば、十分な強度のある薄いヒンジ部１を一体成形でき、しかも凸部４と凹部５の弾性変形を伴う嵌め合わせにより、蓋体２の不用意な開放を防止できる。



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【特許請求の範囲】

【請求項１】　薄肉のヒンジ部で一体に連結された蓋体と本体とからなり、蓋体と本体には、蓋体閉鎖時に互いに嵌め合わされる凸部と凹部が形成されていて、凸部は先端側に基部側より幅広部分を有し、凹部はこの凸部の形状に応じた形状をなし、全体がポリオレフィン系合成樹脂のビーズ発泡成形によって一体に成形されていることを特徴とする合成樹脂発泡体嵌合容器。

【発明の詳細な説明】

【０００１】

【産業上の利用分野】本発明は、衝撃に弱い物品や保温を要する物品の包装に用いられる合成樹脂発泡体製の容器に関するもので、特に蓋付きの容器に関する。

【０００２】

【従来の技術】従来、合成樹脂発泡体製の容器としては、種々の形状の容器を容易に一体成形できることから、ポリオレフィン系やポリスチレン系の合成樹脂のビーズ発泡成形品が広く使用されている。また、蓋付容器も多く使用されているが、これは蓋体と本体が別体となったものとなっている。

【０００３】

【発明が解決しようとする課題】しかしながら、蓋体と本体が別体となったものは、多量の容器を用意して包装を行う場合等において、蓋体と本体がばらばらになって取り扱いにくいばかりか、製造及び品質管理上も不便な問題がある。使用前に蓋体と本体の一側を粘着テープで連結すると共に、この粘着テープをヒンジ部として蓋体を開閉できるようにしたものもあるが、いちいち粘着テープを付設するための手間を要する問題がある。

【０００４】また、蓋体と本体は嵌合できるようになっているものが多いが、この嵌合が不十分で、不用意に蓋体が開きやすかったり、割れや欠けを生じやすい問題もある。特に上記のようなヒンジ部を設けた場合、蓋体はこのヒンジ部を中心にして円運動により開閉されるので、ヒンジ部を設けずに蓋体と本体を垂直方向に開閉できるようにした場合に比して、きっちりした嵌合が得にくく、また割れや欠けを生じやすくなる問題がある。

【０００５】本発明は、このような従来の問題点に鑑みてなされたもので、合成樹脂発泡体の嵌合容器について、蓋体と本体とを一体成形されたヒンジ部で連結すると共に、蓋体の不用意な開放並びに割れや欠けを防止できるようにすることを目的とする。

【０００６】

【課題を解決するための手段】このために本発明で講じられた手段を、本発明の一実施例に相当する図１で説明すると、薄肉のヒンジ部１で一体に連結された蓋体２と本体３とからなり、蓋体２と本体３には、蓋体２閉鎖時に互いに嵌め合わされる凸部４と凹部５が形成されていて、凸部４は先端側に基部側より幅広部分を有し、凹部５はこの凸部４の形状に応じた形状をなし、全体がポリオレフィン系合成樹脂のビーズ発泡成形によって一体に成形されている合成樹脂発泡体嵌合容器としているものである。

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【０００７】

【作用】本発明における一体に成形されたヒンジ部１は、粘着テープによらず、蓋体２と本体３が一体に連結された嵌合容器をもたらすものである。特に本発明は、割れや欠けを生じにくいポリオレフィン系合成樹脂を用いることで、薄いヒンジ部１を形成できることを見出した点と、伴う外れにくい嵌合状態が得られる、凸部４と凹部５の弾性変形を伴う嵌合が可能となることを見出した点に大きな特徴を有するものである。

【０００８】ところで、本発明におけるヒンジ部１のような部分をビーズ発泡成形で一体に成形することは、従来十分な強度が得られないとして行われていないことである。特にポリスチレン系合成樹脂のビーズ発泡成形体では、脆性が大きいので、特別な後加工でも行わない限り、ヒンジ部１として必要な強度を得ることはできない。

【０００９】しかし、本発明者等は、ポリオレフィン系合成樹脂のビーズ発泡成形体の場合、ビーズが１粒ずつ１列に並んで融着されているような薄い成形部分でも、裂けや割れを生じにくく、実用的な強度を十分維持できることを見出し、これによって初めて本発明におけるヒンジ部１の一体成形がもたらされたものである。

【００１０】本発明における凸部４と凹部５は、いわば先端部が広がった凸部４とこの凸部４の形状に沿った形状の凹部５が嵌め合わされることで、蓋体２の閉鎖時に蓋体２が本体３に係止され、閉鎖状態の安定性をもらすものである。また、この凸部４と凹部５の嵌め合わせは、凸部４の幅広部分を弾性変形させることで行われるもので、このような嵌め合わせは、柔軟で粘り強く、弾性変形能に富むポリオレフィン系合成樹脂のビーズ発泡成形体であるからこそ可能なものである。

【００１１】このような弾性変形を伴う嵌め合わせも、ビーズ発泡成形体では行われていないことである。特にポリスチレン系合成樹脂のビーズ発泡成形体では、脆性が大きいので、このような嵌め合わせは割れの原因となるだけで不可能である。

【００１２】また、本発明において、凸部４と凹部５をも一体成形によって得られるものとしているのは、ポリオレフィン系合成樹脂のビーズ発泡成形体であれば、本来型抜きを行いにくい、型抜き方向に対して逆テーパー状の部分を有していても、当該部分を弾性変形させることで、成形品を損なうことなく容易に型抜きを行うことができるという本発明者等の知見に基づくものである。

【００１３】

【実施例】図１に示されるように、蓋体２と本体３は、両者の後辺側に一体に設けられた薄いヒンジ部１によって連結されており、蓋体２はこのヒンジ部１を屈曲させ

ることで開閉可能になっている。

【００１４】ヒンジ部１とは反対側の本体３上辺部には、凸部４が突出している。この凸部４は、先端側が基部側より幅広の、いわばきのこ状をなしている。また、蓋体５には、この凸部４と対応する位置に、凸部４の形状に沿った形状の凹部５が形成されており、蓋体５の閉鎖時に、凸部４の先端側幅広部を弾性変形させることで、両者が嵌め合わされるようになっている。

【００１５】本体３の上辺内周は切り欠かれた状態の段部６となっている。また、蓋体２の下辺内周には、この段部６に嵌り合う枠部７が形成されている。段部６と枠部７は必須のものではないが、本体３に対して蓋体２が水平方向にずれるのを防止し、蓋体２の閉鎖状態をより安定させるためには設けることが好ましい。

【００１６】本嵌合容器は、全体がポリオレフィン系合成樹脂のビーズ発泡成形によって一体成形されているものである。

【００１７】ポリオレフィン系合成樹脂としては、例えば低，中，高密度ポリエチレン、線状低密度ポリエチレン、線状超低密度ポリエチレン、エチレン－酢酸ビニル共重合体等に代表されるエチレン系樹脂、ポリプロピレン、エチレンプロピレンランダム共重合体、エチレンプロピレンブロック共重合体等に代表されるプロピレン樹脂、これらの混合樹脂等を挙げることができる。これらの中でも、低，中密度ポリエチレン、線状低密度ポリエチレン、線状超低密度ポリエチレン、これらの混合樹脂が発泡・成形性に優れる点で好ましい。

【００１８】これらの樹脂は、架橋して用いることも、架橋せずに用いることもできる。その架橋の有無や架橋度の選択は、対象とする樹脂や目標とする成形体の設計値によって適宜選択すればよい。例えば一般にはプロピレン系樹脂は無架橋の状態で十分実用に供せる成形体が得られるが、ポリエチレンに代表されるエチレン系樹脂では、架橋した方が発泡構造の均質性や成形体の機械的特性が高まるので、架橋することが好ましい。この架橋度は、沸騰キシレンの８時間抽出残渣で求めるゲル分率で、５～８０％の範囲が好ましい。

【００１９】本嵌合容器を形成するポリオレフィン系合成樹脂のビーズ発泡成形体は、その発泡倍率が１０～３５倍程度であることが好ましい。また、ヒンジ部１は、その断面の厚さ方向に直径約２～５ｍｍのビーズが１～２個融着されている薄いものであることが好ましい。発泡倍率が高過ぎる場合も低過ぎる場合も必要なヒンジ部１の強度が得にくくなる。また、ヒンジ部１の断面厚さ方向のビーズの数が多くなり過ぎたりビーズの直径が大きくなり過ぎてヒンジ部１の厚さが厚くなり過ぎると、蓋体２の開閉がしにくく、ヒンジ部１の破損も生じやすくなる。

【００２０】図示される凸部４及び凹部５は、本嵌合容器を一体成形する場合、通常の型抜き方向に逆手一パーを形成し、型抜きができなくなる形状をなしているが、ポリオレフィン系合成樹脂のビーズ発泡成形体の場合、当該部分を弾性変形させることで容易に型抜きを行うことができる。

【００２１】凸部４と凹部５は、図示されるような形状のみではなく、凸部４としてはその基部側より先端側の幅が広い形状、例えば逆くさび形等でもよく、凹部５の形状はこの凸部４の形状に沿って定めればよい。また、凸部４と凹部５は、図示されているものとは逆に、蓋体２側に凸部４を設け、本体３側に凹部５を設けるようにしてもよい。

【００２２】

【発明の効果】本発明は、以上説明した通りのものであり、ヒンジ部１によって一体に連結されかつ開閉される蓋体２を有し、しかも凸部４と凹部５で不用意な蓋体２の開放が防止されると共に、割れや欠けを生じにくく、何回も繰り返し使用できる扱いやすい嵌合容器が得られるものである。

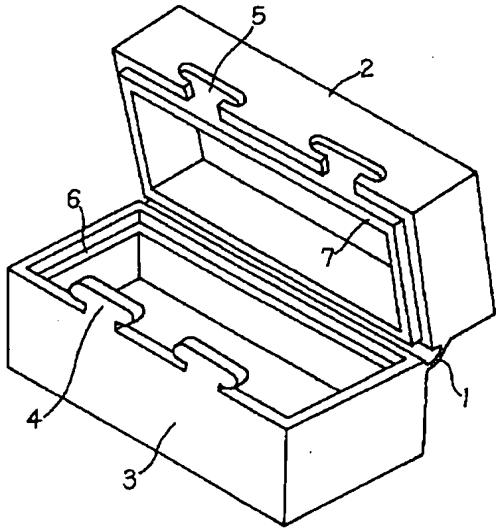
【図面の簡単な説明】

【図１】本発明の一実施例を示す斜視図である。

【符号の説明】

１　ヒンジ部
２　蓋体
３　本体
４　凸部
５　凹部
６　段部
７　枠部

【図１】



フロントページの続き

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